

SCOPING SUMMARY

MOFFAT COLLECTION SYSTEM PROJECT

December 2003



US Army Corps of Engineers
Omaha District

Wyoming Regulatory Office
2232 Dell Range Blvd., Suite 210
Cheyenne, WY 82009-4942



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
WYOMING REGULATORY OFFICE
2232 DELL RANGE, BLVD., SUITE 210
CHEYENNE, WYOMING 82009-4942

REPLY TO
ATTENTION OF:

December 22, 2003

Subject: Moffat Collection System Project – Scoping Summary Report

Dear Reader:

Enclosed is the Scoping Summary, which summarizes the written and oral comments, received during public and agency scoping. We are currently in the process of evaluating a range of alternatives for the project. After the screening of alternatives, we will begin preparing the Draft EIS. The Draft EIS is expected to be available to the public in the spring of 2005.

We appreciate your participation in this scoping process. If you have questions or comments, please contact Paula Daukas, URS Project Manager, the third-party environmental consultant or me at the following addresses:

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Sincerely,

A handwritten signature in black ink, appearing to read "Chandler Peter", is written over a horizontal line.

Chandler Peter
Regulatory Project Manager

TABLE OF CONTENTS

Section 1	Introduction	1-1
Section 2	Scoping Process	2-1
	2.1 Agency Scoping.....	2-1
	2.2 Native American Consultation.....	2-1
	2.3 Public Scoping	2-2
Section 3	Summary of Issues	3-1

List of Figures

Figure 1	Water Collection System
Figure 2	Gross Reservoir Enlargement Alternatives
Figure 3	Leyden Gulch Reservoir Alternatives

List of Appendices

Appendix A	Public Notices
Appendix B	Public Scoping Meetings
	• Attendance Sheets
Appendix C	Comment Letters and Written Scoping Meeting Comments
	• Table C-1 – Comment Letters and Public Testimony Received During Public Scoping

1.0 Introduction

The U.S. Army Corps of Engineers (Corps) is preparing an Environmental Impact Statement (EIS) to analyze the direct, indirect, and cumulative effects of a water supply project called the Moffat Collection System Project. The project proponent is the City and County of Denver, acting by and through its Board of Water Commissioners (Denver Water). In accordance with the National Environmental Policy Act (NEPA) (§1501.7), the Corps has initiated the scoping process to provide for an early and open process to gather information from the public and interested agencies on the issues and alternatives to be evaluated in the EIS. The purposes of scoping are to:

- Inform the participants about the background, purpose, and features of the project.
- Gather information about the issues and concerns, and identify the significant issues to be analyzed in detail in the EIS.
- Identify a reasonable range of alternatives and potential impacts to be addressed in the EIS.

This report summarizes the issues identified in the public and agency scoping meetings and documents the results of the entire scoping process to date.

Overview of the Moffat Collection System Project

The mission of Denver Water is to provide high quality, dependable, and safe drinking water to over 1.2 million customers in the City and County of Denver and its distributor contractors. The water collection system is comprised of three major systems shown in Figure 1, the Moffat Collection System, the South Platte Collection System, and the Roberts Tunnel Collection System. In meeting their water supply obligation, Denver Water developed an Integrated Resources Plan (IRP) to analyze existing and future water supplies and customer demands. The IRP and recent drought conditions have highlighted several existing problems in the Moffat Collection System that need to be solved. A summary of the four problems and needs are:

- **Reliability:** In a single severe dry year, the Moffat Treatment Plant and Denver Water's raw water customers are at risk of running out of water.
- **Vulnerability:** 90 percent of Denver's water supply storage and 80 percent of its water supply is in the South System, which is unacceptably vulnerable to manmade and natural disasters, and system failures.
- **Flexibility:** A higher level of operational flexibility is needed to react to maintenance-required shutdowns and system problems, and to satisfy customers' water needs.
- **Firm Yield:** Denver Water needs an additional 18,000 acre-feet of firm yield in its Moffat Collection System for its customers. Approximately 72,000 acre-feet of reservoir storage would provide 18,000 acre-feet of firm yield. ("Firm yield" refers to the average annual supply that can be delivered to customers over an extended period.)

Denver Water has not selected a specific project to address these needs, but will be exploring alternatives through the NEPA process to result in a preferred alternative. Each alternative, except the No Action, should represent an alternative means of satisfying the identified Purpose and Need and of resolving issues. Currently, Denver Water has identified three preliminary

Section 1 – Introduction

alternatives, and a combination of these options, which will be considered in the alternatives screening process. The alternatives are:

1. **Gross Reservoir Enlargement** – expand the storage capacity of the existing 41,811 acre-foot reservoir located west of Boulder in Boulder County by either 20,000 acre-feet or 71,000 acre-feet (Figure 2).
2. **Leyden Gulch Reservoir** – construct a new reservoir at Leyden Gulch, located in Jefferson County approximately 5 miles north of Golden. Two storage capacities are being considered - 31,300 acre-feet and 60,200 acre-feet (Figure 3).
3. **Potable Recycling Project** – construct an indirect potable recycling facility with new storage and transmission lines.

All of these alternatives require Denver Water to apply to the Corps for a Section 404 permit. Based on a review of the preliminary project alternatives and apparent significant impacts, the Corps, as lead agency, has determined that an EIS must be prepared to evaluate the potential impacts to human health and the environment of each of the selected alternatives. As required by NEPA, the EIS would provide an objective and thorough assessment of the potential significant impacts of the preferred alternative and reasonable alternatives. The identification of significant issues, alternatives, and potential impacts during the scoping process provides the basis for the detailed assessment to be conducted for the EIS.

The Corps initiated the scoping process by publishing a Notice of Intent (NOI) to prepare an EIS for the Moffat Collection System Project preliminary alternatives in the *Federal Register* on September 17, 2003. In addition, the Corps mailed a Public Notice, dated September 15, to over 200 entities, including federal, state, regional, and local governmental agencies; Native American Tribes; recreation and environmental organizations; water districts; homeowners associations; and other special interest groups. Legal notices were published on September 17 or 18, 2003 in *The Denver Post/Rocky Mountain News*, *The Boulder Daily Camera*, *The Arvada Sentinel*, and the *Winter Park Manifest*. The NOI and public notices can be found in Appendix A. The public scoping period extended 52 days from September 17, 2003 to November 7, 2003. During that time, the Corps held an agency scoping meeting on October 7, and three public scoping meetings – in Boulder on October 7, in Denver on October 8, and in SilverCreek on October 9.

The comments gathered by the Corps during the NEPA scoping process are summarized in Section 3.

2.0 Scoping Process

2.1 Agency Scoping

An Agency Scoping Meeting was held on October 7, 2003 in Littleton, Colorado. Representatives from the following agencies attended the meeting:

- U.S. Army Corps of Engineers (Corps) – Omaha District and Denver Regulatory Office
- U.S. Environmental Protection Agency (EPA)
- Federal Energy Regulatory Commission (FERC)
- U.S. Forest Service (USFS)
- Colorado Department of Public Health and Environment (CDPHE)/Water Quality Control Division
- Grand County

Other agencies that will be participating in the scoping process, but were not at the Agency Scoping Meeting, include the U.S. Fish and Wildlife Service, Colorado Division of Wildlife, State Historic Preservation Office (SHPO), Advisory Council on Historic Preservation, Boulder County, and Jefferson County.

At the Agency Scoping Meeting, Denver Water presented their reasons for proposing a Moffat Collection System Project and an overview of potential alternatives. All attendees participated in a discussion of the project's Purpose and Need, environmental issues and potential impacts, data availability and data/field study needs, and identification of preliminary alternatives.

The Corps has received comment letters from federal, state, and local agencies since the NOI was published on September 17, 2003. Comments received from the agencies are summarized in Section 3 of this document and copies of the written comments are in Appendix C.

2.2 Native American Consultation

The Corps has contacted 26 Native American Tribes in writing to solicit Native American input for the proposed project. The tribes, councils, and agencies that have been contacted include:

- | | |
|--|--------------------------------------|
| • Apache Tribe of Oklahoma | • Oklahoma Office of Indian Affairs |
| • Cheyenne and Arapaho Tribes of Oklahoma | • Pawnee Nation of Oklahoma |
| • Cheyenne River Sioux Tribe | • Pine Ridge Indian Reservation |
| • Colorado Commission of Indian Affairs | • Northern Cheyenne Tribe |
| • Comanche Tribe of Oklahoma | • Pueblo Tribe |
| • Crow Creek Sioux Tribe | • Rosebud Sioux Tribe |
| • Fort Sill Apache Tribe | • Shoshone Tribe (Eastern Band) |
| • Hopi Tribe, Cultural Preservation Office | • South Dakota Indian Affairs Office |
| • Jicarilla Apache Tribe | • Southern Ute Indian Tribe |
| • Kiowa Tribe of Oklahoma | • Standing Rock Sioux Tribe |
| • Navajo Nation Tribal Center | • Northern Ute Tribe |
| • Northern Arapaho Tribe | • Utah Division of Indian Affairs |
| • Oglala Lakota Tribe | • Ute Mountain Ute Tribe |

Section 2 – Scoping Process

The Historic Preservation Representative of the The Cheyenne and Arapaho Tribes of Oklahoma responded in a letter dated November 3, 2003, expressing interest in participating in the project and being involved in the cultural resource inventories.

2.3 Public Scoping

During the public scoping process, the Corps gathered public comments at the Public Scoping Meetings, and through electronic mail, mail, and facsimile. There were three Public Scoping Meetings. Twenty-six members of the public attended the October 7, 2003 meeting at Fairview High School in Boulder, Colorado; 13 came to the one at the Highlands Masonic Lodge in Denver, Colorado on October 8, 2003; and 21 attended the public meeting at the Inn at Silver Creek in SilverCreek, Colorado on October 9, 2003.

During the meetings, the Corps presented an overview of the NEPA process and the scoping process. A representative from Denver Water provided a project overview and problem statement. Two documents were distributed at the meetings: (1) a *Scoping Document* prepared by the Corps that included a description of the scoping and NEPA process, a request for comments, and a comment form, and (2) the *Moffat Collection System Project Information Document* prepared by Denver Water, describing the problem statement, project background, and potential alternatives.

Following the presentations, the meeting attendees were invited to speak directly with the Project Team at separate stations in an open house format. The Denver Water station was available for the public to ask questions about Denver Water's project problem statement and potential alternatives. The Corps station was available for the public to ask questions and submit comments verbally or record comments on flip charts. In addition, a court reporter was available at the meetings to record verbal comments. Copies of the attendance lists are contained in Appendix B. Written and transcribed comments received from the public are summarized in Section 3 of this document and a copy of the written comments is included in Appendix C.

3.0 Summary of Issues

This section documents the results of the agency and public scoping process and presents a general characterization and analysis of the comments received. All of the comments and questions received will be considered in the EIS.

Written and oral comments on individual issues, questions, and statements identified during scoping were initially recorded. The comments were summarized and organized according to the following categories: project purpose and need, potential alternatives, environmental issues (physical, biological, human, and cumulative), suggested data sources, and general issues. Additional issues may be added, combined, modified, or deleted as the EIS progresses and the impact potential of the selected alternatives is defined.

Table C-1 in Appendix C lists the 40 written comment letters and oral comments from eight individuals submitted to the Corps. The most frequent issues and concerns raised by the commentators related to potential effects to surface water resources, water supplies, and water rights. Forty-six percent of these comments were provided by entities and individuals on the West Slope. The most frequent issues and concerns found to be repeated during the scoping process included:

- Effect of proposed diversions by Denver Water from the Fraser River on water supply needs for municipal water demands and environmental requirements
- Effect of the proposed diversion on the economy of the Fraser River Basin, in particular the water-related, recreation-based economy of Grand County, and the potential lost opportunities for future growth in Grand County
- Effect of Denver Water reducing or eliminating bypass flows in the Fraser River Basin pursuant to its U.S. Forest Service (USFS) agreements

Other issues/concerns that generated the most comments were related to the following topics:

- Additional alternatives to be considered, in particular conservation, reuse, and other non-structural alternatives
- Effects of additional diversions and water storage on stream flow, fish, wildlife, and vegetation on both sides of the Continental Divide

Following is a summary of the specific comments.

Project Purpose and Need

1. The development of a concise, defensible project purpose for which practicable alternatives can be selected is critical to the EIS process.
2. Reliability Problem:
 - a. The volume of water needed to meet the reliability need should be documented.
 - b. A “single severe dry year” should be clarified relative to the firm yield requirement so that a water supply alternative necessary to meet a very rare, 1-year event can be evaluated.

Section 3 – Summary of Issues

- c. A thorough assessment of the risk of water supply shortages is vital to understanding the least damaging practicable alternatives to the proposed actions.
3. Vulnerability Problem:
 - a. Regarding the potential of the South System failing, a more useful way to address this need is to estimate how long the Moffat System (North System) could provide water to the entire system. Time-based risk analysis would allow for better evaluation of practical alternatives. There needs to be a reasonable definition of “acceptable vulnerability.”
 - b. The evaluation of Denver Water’s vulnerability and its need for flexibility should consider the existing and potential future benefits of interconnections with other water providers, lawn irrigation restrictions under the existing or a modified drought response plan, and Denver Water’s ability to divert the legally available nontributary and not-nontributary groundwater in times of emergency or system shortage.
4. Flexibility Problem:
 - a. The flexibility problem should be clarified as a distinct problem relative to the vulnerability and reliability problems so that alternatives can be developed.
5. Firm Yield:
 - a. How much will the 18,000 acre-feet of firm yield balance the 10 percent water supply provided by the North System versus the 90 percent water supply provided by the South System? Is 18,000 acre-feet sufficient to make a significant difference to vulnerability and flexibility problems?
 - b. The EIS should consider the Purpose and Need of including 3,000 acre-feet of yield to the City of Arvada in this project.
 - c. If it were not for the contracted commitments that Denver Water has to other northern Front Range communities (i.e., Arvada, North Table Mountain, Westminster, and Broomfield), Denver Water’s four listed needs would be questionable.
 - d. Utilizing historic water availability numbers without including 2002 misrepresents actual water availability because the following occurred during the 2002 drought:
 - Streamflow in parts of the Colorado River Basin and tributaries was lower than in previous droughts.
 - Problems occurred with Green Mountain Reservoir.
 - Denver Water reduced its bypass flows past their Moffat Collection System, significantly reducing streamflows in the Fraser River Basin.
 - There were changes in the administration of Xcel Energy’s Shoshone Call.
 - Clinton Reservoir failed to fill.
 - Denver Water exhausted its Williams Fork Reservoir supply and used Dillon Reservoir to augment its Fraser River diversions by an undecreed exchange.
6. Purpose and Need of additional water supplies by Denver Water and the future demand within its lawful service area must be defined in relation to the municipal use,

metropolitan area, and municipal water system limitations of the Blue River Decree. The EIS should be based on a clear definition of the area that may be served by Denver Water in the future.

7. The total water needs in the Fraser River Basin must be carefully calculated.
8. Consider the need for additional storage downstream of the Metro wastewater treatment plant to regulate reusable effluent and return flow.
9. Flood storage and opportunities to offset flooding in South Boulder Creek should be added as part of the Purpose and Need for this project and included in the scope of the environmental analyses to be addressed in the EIS.
10. Denver Water must create an aggressive, long-term conservation plan to deal with future water demand.
11. Concerned that the Purpose and Need not be limited to Denver Water's stated objectives, thereby foreclosing consideration of alternatives that involve trade-offs among the four stated elements.

Potential Alternatives

12. Gross Reservoir Expansion:
 - a. Effect of potential Federal Power Reserve condemnation of Gross Reservoir hydroelectric facility on vulnerability problem.
 - b. Gross Reservoir enlargement would require a FERC license amendment before work could begin.
 - c. Dam failure must be considered with this alternative.
 - d. Compare cost and storage volume for the two Gross Reservoir enlargement alternatives.
 - e. Effect of the proposed storage expansion on the Gross Dam electric power generation.
 - f. Compare current and proposed new surface area for each of the Gross alternatives.
 - g. Incorporate flood storage for Boulder County for the purpose of mitigating and/or offsetting the effects of flooding in South Boulder Creek.
13. New Reservoir at Leyden Gulch:
 - a. Compare cost and water storage volume of proposed Leyden dam location and damming the narrowest portion where Leyden Creek passes through the rocky ridge (relocate highway versus relocate railroad).
 - b. Potential benefits of this alternative: 1) a reservoir surrounded by an open space buffer would be compatible with the public open space and parks in area, including the large Rocky Flats National Wildlife Refuge located north and east of the Leyden site, 2) far fewer people would be negatively impacted, and 3) the proximity to contractors working on the project give this option an edge over Gross Reservoir.

Section 3 – Summary of Issues

- c. Combine development of Denver Water's available groundwater with the construction of the Leyden Gulch alternative. The groundwater could be collected and pumped into the reservoir.
 - d. Combine Leyden Gulch Reservoir alternative with the development of a non-potable water recycling project.
- 14. Potable Recycling Facility:
 - a. Maximizes the use of Denver Water's existing water rights without diverting additional water from either the West Slope or South Boulder Creek.
 - b. Provide cost comparisons for equal volumes of recycled and reconditioned water versus increased diversion from the Moffat Collection area.
 - c. Gravel pit storage for recycled potable water.
 - d. Is indirect potable reuse a stand-alone alternative?
- 15. West Slope Alternatives:
 - a. Cooperative efforts with Grand County, West Slope, and Northern Colorado Water Conservancy District to find alternative ways of exchanging water to provide much needed water quality and quantity protection in the Fraser Valley.
 - b. Utilization of additional exchanges involving Wolford Mountain and Green Mountain Reservoirs.
 - c. "Around the Horn" alternative – a cooperative effort between Denver Water and the Northern Colorado Water Conservancy District so that flows in the Fraser Valley would be increased, then diverted by Northern through Granby Reservoir over to Broomfield, in exchange for water that Denver Water would otherwise have to divert from the Fraser Valley over to Broomfield.
 - d. Collecting water from the additional yield provided by improvements to or expansion of the Williams Fork Collection System.
 - e. Additional exchanges involving the West Slope and Denver Water and Wolford Mountain to increase the flows in the Fraser Valley.
 - f. A cooperative reservoir in Fraser Valley at the headwaters of the Colorado River because the Biological Opinion for the Upper Colorado River Basin (above the 15-mile reach) requires additional storage for East Slope diverters to mitigate impacts on the endangered species in the Colorado River Basin.
 - g. Enlarging Meadow Creek Reservoir to allow for additional bypasses as necessary in the Upper Fraser.
 - h. Building Ranch Creek Reservoir for additional supply purposes as well as exchanging water and increasing flows in the Upper Fraser.
 - i. Pumping back a portion of the Fraser River bypass flows to the headwaters and back down again for water quality reasons.
 - j. Measuring the in-stream flow bypasses for the Fraser River at the point of diversion by Denver Water, not downstream.

Section 3 – Summary of Issues

- k. Additional accommodations between Denver Water and the headwater communities to provide alternative water supply opportunities in case of a crisis.
- 16. East Slope Alternatives:
 - a. Opportunities for flood storage in Gross Reservoir for flood control proposed in South Boulder Creek, such as allocating a 4,000 acre-foot storage pool below the Gross spillway crest to capture 100-year runoff from the upper watershed.
 - b. Acquiring more water rights or more water from East Slope (i.e., Greeley).
 - c. Further integration of Denver Water's and the Northern Water Conservancy District's Front Range systems.
 - d. Development and purchase of East Slope senior agricultural water rights.
 - e. East Slope agricultural conversion and dry-year leasing.
 - f. More connections between the South and North Systems, such as bringing water from the South System for storage and/or treatment in the North System.
 - g. Two Forks Reservoir and the role, if any, that Two Forks would play in meeting future water demands.
- 17. Conservation/Non-structural Alternatives:
 - a. Reuse and/or conservation measures.
 - b. Financial incentives to speed the replacement of inefficient plumbing fixtures and improvement of lawn irrigation efficiency, leak detection and repair, and adoption and enforcement of lawn size and irrigation restrictions.
 - c. Limiting water usage by Denver Water users and/or continuing water restrictions on customers that were required in 2002.
 - d. Limiting new taps issued to customers by Denver Water.
 - e. Aggressive pricing techniques (e.g., Santa Fe).
 - f. Incorporate sustainable water management in all alternatives.
 - g. An alternative with small capacity elements, non-structural options, conservation, and project phasing.
 - h. Non-structural alternatives.
- 18. Groundwater Alternatives:
 - a. Utilization of the Denver aquifer or other groundwater resources.
 - b. Groundwater and/or reuse in conjunction with water from the Northern Subdistrict.
- 19. Other Alternatives:
 - a. A combination of alternatives that would result in at least 40,000 acre-feet of yield in a manner that minimizes or mitigates the environmental impacts of the project.
 - b. Providing both treated and non-treated water should be evaluated for each alternative.

Section 3 – Summary of Issues

- c. Alternatives proposed in existing studies such as the Windy Gap Firming Project; Upper Colorado River Basin (UPCO) Study; GEI Study; Eagle, CO project; or the Gunnison River Diversion Project.
- d. Alternatives listed in the Metropolitan Water Supply Investigation, completed in 1999 by the Colorado Water Conservation Board in cooperation with 47 Front Range water suppliers.
- e. An alternative should be considered that looks regionally or statewide at water resources and logically appropriates the delivery system. Review Statewide Water Supply Initiative (SWSI) mission statement.
- f. Alternative that provides flow benefits.

Environmental Resources

- 20. Historic data that are more than 5 years old need to be verified as currently representative for projects of this nature.
- 21. For each alternative, the Draft EIS should explicitly include identification of appropriate mitigation where impacts are expected, including designation of responsible party, funding source, and specific time-line to meet mitigation standards.
- 22. Ensure mitigation is considered as part of the project.

Physical Resources

Surface Water Resources

- 23. Fraser River/West Slope Issues:
 - a. Effect of reducing Fraser River bypass flows on the ability of local water districts (i.e., Winter Park Water and Sanitation District, Grand County Water and Sanitation District, and others) to meet wastewater treatment discharge permit limits and water quality standards, particularly in light of the 2002 drought that may create new benchmarks and additional treatment requirements and costs for the districts.
 - b. Effect of reducing Fraser River bypass flows on the ability of local water districts to meet municipal water supply demand.
 - c. Effect on Fraser River's reliability, vulnerability, flexibility, and firm yield.
 - d. Effect of increased diversions of water from the Fraser River Valley resulting in infrequent drought conditions becoming a common occurrence.
 - e. Effect of lack of "wet water" (i.e., physical water) in headwaters of the Fraser River and other tributaries.
 - f. Effect on water quality and stream health of the Fraser and Blue Rivers and Colorado River downstream.
 - g. Effect on the operation of water diversion and storage facilities in the Colorado River and its tributaries, including the Blue and Fraser Rivers, and each component of Denver Water's water system, including the Roberts Tunnel and Dillon Reservoir.
 - h. Effect on all in-stream flow and bypass flow requirements for affected streams.

- i. It is critical that the geographic scope examine the impacts throughout Denver Water's entire system and the Upper Colorado River Basin.
 - j. Effects of reducing USFS bypass flows, including:
 - Quantify the volume of water Denver Water was able to divert during the 2002 drought by dropping below typical USFS bypass flows.
 - Determine how this quantity of water could be supplied by alternatives other than dropping below the required bypass flows.
 - Quantify flow requirements in the upper Fraser River and its tributaries required for preservation and enhancement of the existing riparian, wetland, and aquatic resource ecosystem and habitat associated with each river, stream, or creek.
 - k. Effect on any changes to operational regime of Woford Mountain, Dillon, Williams Fork, and Green Mountain Reservoirs.
 - l. Effect on water quality, including changes in salinity levels, in the lower stretches of the Colorado River in Colorado and the Lower Basin states.
 - m. Effect of increased use of magnesium chloride on roads in the Fraser River Basin on water quality. These pollutants will increase at the same time that water quantities decrease. Research salinity in the Upper Fraser River and evaluate how the alternatives that result in reduced in-stream flows affect salinity loading.
24. South Boulder Creek Issues:
- a. Effect on water quality on South Boulder Creek below Eldorado Springs.
 - b. Evaluate mitigation to include bypass flows to enhance the natural environment of South Boulder Creek below Eldorado Springs.
 - c. Consider options for mitigating flood management issue on South Boulder Creek. Approximately 4,000 acre-feet of storage in Gross Reservoir could help to mitigate flood issues. Using Gross Reservoir for active flood control would help remove the large volume of runoff from the upper watershed and decrease the amount of flood storage needed downstream, resulting in increased public safety to downstream communities, protecting the environment by eliminating the need for additional downstream storages, and greatly reducing the socioeconomic impacts resulting from a flood.
 - d. Effect of increased flows from trans-basin diversions and channelization on the hydrology of South Boulder Creek. Consider what can be done to maintain or restore some of the natural functions of the South Boulder Creek stream channel.
 - e. Effect of the City of Boulder and Denver Water intergovernmental agreement on in-stream flows. Integrate the provisions of this agreement into the planning and hydrologic modeling for the EIS.
 - f. Consider coordinating with or merging this EIS with the ongoing South Boulder Creek floodplain and reconnaissance studies to ensure a coordinated and informed response, and to efficiently manage resources to meet the needs of both studies.
 - g. Effect on a future wastewater treatment plant below Eldorado Springs.

Section 3 – Summary of Issues

25. Effects caused by changes in the flow regime of all affected streams, including the South Platte River.
26. Effect of changes in temperature of any affected stream segment.
27. Effect on sediment loads.
28. Effect of anticipated evaporative losses with each reservoir alternative
29. Effect of potable recycling alternatives on drinking water quality. Chemicals in treated sewage may have health impacts, but are not currently regulated.
30. Effects to the chemical, physical, and biological integrity of all affected streams.
31. Where in Denver Water's system is water quality monitored – upstream of treatment plants?
32. Effect of the project resulting in increased storage needs for users within the Municipal Subdistrict of the Northern Colorado Water Conservancy District service area.
33. Selection of stream reaches for analysis is a critical exercise and should include agency review and comment before actual survey work occurs.
34. Hydrological analyses should include wet, average, and dry year analysis.
35. EIS should include a reach-by-reach impacts analysis for the tributary system. If seasonal water levels, quantity, and quality are altered, the EIS needs to analyze:
 - a. Impacts to resident fish species and invertebrate assemblages.
 - b. Impacts to stream morphology.
 - c. Impacts to sediment and nutrient flow.
 - d. Impacts to established or to the development of Total Maximum Daily Loads (TMDLs), designated and/or beneficial uses, water quality standards, and the Source Water Protection Program
36. Effect of the project resulting in proposed changes in operations for each of Denver Water's water system components.
37. Identification of mitigation measures for potentially adverse impacts to stream systems.
38. Effect of prohibiting the grass requirement in any and all subdivisions.

Groundwater Resources

39. Effect of depletions to the Fraser River, Elk Creek, and St. Louis Creek on groundwater recharge.

Water Rights and Water Use

40. West Slope Issues:
 - a. Effect of eliminating the drought clause in the Fraser River in-stream flow requirements associated with the Denver Water easement on USFS lands, and requiring that the flows be mandatory regardless of drought or other conditions. In-stream flows were cut back in 2002 because of the drought, affecting the ability of

Section 3 – Summary of Issues

- local water districts to meet municipal water supply demand and water quality requirements.
- b. Effect of changing the Denver Water easement on USFS lands into a special use permit to allow review, and potentially appeals, by other agencies.
 - c. Effect of making the Moffat Collection System more open for “wheeling arrangements” to help solve physical water availability problems in the headwaters of the Fraser River.
 - d. Consider mitigation in the form of Denver Water giving Winter Park Resort five-to-one leverage on its snowmaking water under the Clinton Reservoir-Fraser River Water Agreement.
 - e. Mitigation should include requiring Denver Water to enter into a permanent agreement with Intrawest for the delivery of 25.44 acre-feet of additional 20 percent water.
 - f. Effect of Denver Water’s current and proposed storage in East Slope reservoirs of water diverted from the Colorado River Basin in relation to its existing water rights.
 - g. Effect of the project on increasing the frequency and durations of calls from the mainstem of the Colorado River on junior water rights in the Blue and Fraser River basins.
 - h. Determine whether or not Denver Water fully exercises its South Platte water rights before diverting water from the Colorado River Basin.
 - i. Not aware of any state water right that allows Denver to use its Fraser River System priorities to fill a Leyden Gulch or enlarged Gross Reservoir. Will it be assumed that Denver Water’s additional diversions occur under its existing rights or under new junior rights? Are Denver Water’s additional diversions constrained by existing storage decrees on the East Slope or simply by the physical capacity of its system?
 - j. Determine whether or not Denver Water has a decree allowing it to store water from the Western Slope in their reservoirs as designated.
 - k. Need for mitigation of impacts from depletions to the Fraser River to existing and future water uses in Grand County.
 - l. Suggest moving Denver Water gage on Fraser River to the Winter Park Water and Sanitation District intake.
 - m. Effect on operation of the Shoshone Power Plant.
 - n. Evaluate how many of Denver Water’s rights were obtained after 1940 and are available for reuse (regarding the 1940 agreement between Denver Water and Consolidated Ditch companies).
 - o. Project must be consistent with the Blue River Decrees and Senate Document 80.
 - p. The EIS scope should be large enough to cover the complexities that have arisen from over 130 years of Colorado water law and trans-basin diversions, specifically from the West Slope of the Continental Divide to the East Slope.

Section 3 – Summary of Issues

- q. Although a legal right may exist for Denver Water to divert water, the EIS should consider whether or not the actual wet water exists for this project.
- 41. Effect of developing additional storage on the north end of Denver Water's Moffat Collection System (i.e., the Gross Reservoir enlargement and new Leyden Gulch Reservoir alternatives), upon Eldora Mountain Resort's exchanges described in the Stipulation (Case No. 97CW275, Colorado District Court in and for Water Division No. 1).
- 42. Effect of changes to current stream and water usage.
- 43. The EIS process must take into account the fact that native water and Denver Water's water must be properly accounted for and administered as it is run through the Moffat Tunnel and the Gross Reservoir facilities. Otherwise, downstream water users may be injured as a result of not receiving water they are entitled to divert.
- 44. State law dictates that Denver Water must allow all of the native water to flow through or around the project facilities unimpeded, except such amount as Denver Water may lawfully divert or store in priority.
- 45. Existing water rights should be examined in relation to downstream existing rights and ecological needs, over-appropriation issues, etc.
- 46. Effect on diversions by the City of Englewood. The assumptions concerning Englewood's Fraser River diversions need to be disclosed. Under the Blue River Decree, certain operations of the Englewood rights are subject to approval by the Secretary of the Interior. Have these approvals been obtained?
- 47. Must ensure that junior and senior water rights holders are not injured. The presence and adequacy of water measuring devices above and below Gross Reservoir, as well as at the Boulder Canal intake, and accounting procedures should be evaluated.
- 48. The 1998 Intergovernmental Agreement (IGA) between Denver Water and the City of Boulder provides 2,500 acre-feet of storage space for Boulder for in-stream flows on South Boulder Creek on a year-round basis if the Moffat Collection Project adds 40,000 acre-feet of yield to its supply. This IGA should be incorporated into the EIS process and should be a condition of approval for this project and a new FERC license, if necessary. As part of the permitting and environmental mitigation for this project, Denver Water should be required to contribute water rights to be used for the 2,500 acre-foot in-stream flow conservation pool in Gross Reservoir.
- 49. Effect on downstream agricultural water users.

Air Quality and Meteorology

- 50. Effects to air quality from the growth that the project may encourage.
- 51. Effect of Gross Reservoir expansion on air pollution (i.e., dust and other pollutants caused by construction activities and increased traffic).
- 52. Consider number of years that reservoir capacity will not be reached due to below average precipitation.

Soils

53. Consider surface soil testing at Leyden Gulch site because of potential contaminants from previous Rocky Flats fires.
54. Effect of the proposed water level changes in Gross Reservoir on shoreline inundation and erosion.

Geology

55. Effect of increased earthquake activity potential from water-lubricated faults due to the increase storage at the proposed reservoir sites.
56. Effects to unique geologic features (i.e., Hogback) from possible relocations of State Highway 93 and the Denver and Rio Grand Railroad with the Leyden Gulch Reservoir alternative.

Biological Resources

Vegetation

57. Effect of depletions to the Fraser River and South Boulder Creek on riparian and aquatic habitat.
58. Effect of changes in streamflows causing a trend from aquatic vegetation to upland species.
59. Effects to vegetation in Leyden Gulch. Consider supplementing any seed purchased for revegetation with native collected seed material.
60. Effects of proposed methods for timber removal in the Gross Reservoir watershed (i.e., what routes will be used, and how long will this take?).
61. Effect of a Gross Reservoir enlargement on inundating rare plants and critical habitat.

Wetlands

62. Effect of depletions to the Fraser River on the water quality functions of wetlands of the Fraser and Blue Rivers and the Colorado River downstream.
63. The EIS should include clear maps with wetland delineation and regional water features, and detailed analysis of direct, indirect, and cumulative impacts to all wetlands in system.
64. Effect of constructing the proposed reservoir at Leyden Gulch on existing wetlands; replacing impacted wetlands with a comparable wetland area immediately downstream of the disturbance should be considered for mitigation.
65. Effect of proposed water level changes in Gross Reservoir on existing wetlands.

Wildlife and Fisheries

66. West Slope Issues:
 - a. Effect of depletions to the Fraser River on fisheries and other wildlife.
 - b. Future effects on fisheries in the Fraser and Colorado Rivers including, but not limited to, impacts to native fisheries such as cutthroat trout fisheries.

Section 3 – Summary of Issues

- c. Effects on whirling disease. Determine where whirling disease is located and what is causing it. Assess whirling disease information collected for the Windy Gap Firing Project and impacts that might be caused by this project.
 - d. Effect on threatened and endangered species in the Colorado River Basin.
 - e. Effects to the four endangered fish species in the 15-mile Reach of the Colorado River near Grand Junction and the relationship between Moffat Project depletions and the Colorado River Endangered Species Recovery Program.
67. East Slope Issues:
- a. Effect of potable recycling alternative on aquatic resources and wildlife living in affected area.
 - b. Effect of imposing bypass flow requirements on Denver Water to benefit the cold water fishery on South Boulder Creek downstream of Eldorado Springs.
 - c. Effect of bringing more water over from the West Slope to the East Slope and the impact on the baseline and on threatened and endangered species. Refer to the Platte River EIS in considering this impact.
 - d. Effect of additional diversions and return flows to the South Platte River Basin on endangered species in the South Platte River.
 - e. Effect on Preble's meadow jumping mouse habitat.
 - f. Effect on prairie dog habitat and migrating elk in the potential Leyden Gulch reservoir area.
 - g. Effect of a proposed dam raise and expanded inundation area of Gross Reservoir on elk and other wildlife on the western shores of Gross Reservoir, and on fish reproduction.
 - h. Effect of an enlargement of Gross Reservoir on downstream aquatic resources due to changes in water temperature and dissolved oxygen levels from a proposed expansion of Gross Reservoir.
68. Coordinate with the U.S. Fish and Wildlife Service regarding the following issues:
- a. River restoration, flow and channel modifications, wetlands, and habitat fragmentation regarding species' habitat requirements.
 - b. Migratory Bird Treat Act: how will domestic pets in the area be managed?
 - c. A management plan for surrounding land uses (e.g., pesticide, nutrient, weed, and recreation management) should be included for new reservoir construction alternatives.
69. Effect of alternatives on displacement of native fish species by introduced species (i.e., loss of cutthroat trout by brown and brook trout). Consider easy and cost effective ways to ensure native trout species are protected from displacement by non-natives (i.e., fish barriers). Describe how the proposed alternatives may facilitate or constrain future restoration efforts of cutthroat trout.
70. Effect on migratory and nesting patterns along all affected streams.

71. Effect on boreal toads habitat and populations.

Human Resources

Cultural and Paleontological Resources

72. Effect of a Gross Reservoir enlargement on inundating archaeological and cultural resources.
73. Effect on cultural and paleontological resources in Leyden Gulch including, but not limited to, remnants of Native American activity in the gulch, and historic ranching and cattle grazing operations in the gulch.
74. Effect on historic mining structures from possible relocations of State Highway 93 and the Denver and Rio Grand Railroad with the Leyden Gulch reservoir alternative.

Land Use

75. Effect on opportunities for land development in Grand County that may be lost because of the additional water diversions.
76. Effect of additional firm yield of Denver Water's supply on growth and development in the northern part of the Denver Metro Area.
77. Effect on quarrying or mining in the vicinity of Gross Reservoir for materials to be used on the expansion. Boulder County's Land Use Code requires a review of such plans.
78. Consider the long-range relationship between Colorado Front Range land use policies and water availability.
79. Effect on historic ranching and agricultural uses.
80. Effect on Pike/Isabel and White River National Forests and the USFS Forest Plans.

Recreation

81. West Slope Issues:
- a. Effect of depletions to the Fraser River on water-related recreation (e.g., fishing, rafting).
 - b. Effect on the ski industry.
82. Gross Reservoir Issues:
- a. Effect of additional recreation associated with a Gross Reservoir expansion, which would result in increased traffic and effect on the volunteer Fire Department and other services.
 - b. Effect of Gross Reservoir expansion on The Gross Reservoir Recreation Master Plan, recently completed as part of the Gross Reservoir re-licensing effort.
 - c. Effect of enlarging Gross Reservoir on further delaying the implementation of non-motorized cartop boating at the reservoir, a recreational opportunity that was part of the FERC re-licensing effort.

Section 3 – Summary of Issues

- d. Recommend that the development of the Gross Reservoir Recreation Management Plan be either delayed until the EIS process has been concluded or pursued only in specific areas where the need for specific actions have already been agreed to and are independent of any particular reservoir enlargement alternative.
 - e. Effect of limiting the amount of recreation on an enlarged Gross Reservoir.
 - f. Effect on the construction activities and enlargement of Gross Reservoir on current natural and man-made features (e.g., popular hiking trails such as Forsythe Falls).
 - g. How does Denver Water's recent environmental study of changes in recreational use of Gross Reservoir interface with this EIS?
83. Leyden Gulch Issues:
- a. Effect of the proposed reservoir on the existing open space around the Leyden Reservoir site and on preserving the integrity of surrounding open space such as the Rocky Flats Preserve. Mitigation should consider ways to preserve natural open space and retain the character of the valley.
 - b. Will Jefferson County Open Space be afforded first right of refusal in regards to the Leyden Reservoir site?
 - c. Effect of the proposed reservoir at Leyden Gulch on recreational opportunities. Recreational use should be limited and exclude motorized boating.

Visual Resources/Aesthetics

- 84. Effect on Grand County scenic characteristics and attractions, including water courses affected by the project.
- 85. Effect of expanded inundation with a Gross Reservoir enlargement on visual resources.
- 86. Effect on the protected visual resources of the "Front Range Backdrop."
- 87. Effect of the proposed dam at Leyden Gulch on the visual impact of the surrounding landscape. The design should consider ways to blend with the existing topography and native vegetation of the valley.

Socioeconomics

88. West Slopes Issues:
- a. Effect of depletions to the Fraser River on the local economy:
 - Additional costs to local wastewater treatment plants (i.e., more extensive treatment and plant upgrades) due to lack of dilution.
 - Effect on local economic development in municipalities and in Grand County.
 - b. Effect on tourist-based economy.
 - c. Effect on Grand County's water-based recreational economy.
 - d. Disclose current costs of water to existing and prospective water users in Grand County and changes in costs resulting from this project.
 - e. Effect on power prices or power supply in Grand County.

- f. Effect on the ability of municipalities, the Winter Park Ski Area, and other water providers to provide water for future growth.
 - g. Consider an allowance for municipal water providers in the upper Fraser River Valley to provide water for existing development and future growth.
 - h. Evaluate economic implications of the upper Fraser River Valley community spending over \$20 million in the past 4 years to construct wastewater treatment plants that may become out of compliance with the water diversion.
- 89. Evaluate any increase in costs to treat water/wastewater.
 - 90. Effects to property and real estate values.
 - 91. Evaluate the population forecasts with Denver's Combined Service Area (CSA) and areas served by fixed special contracts.
 - 92. What is the population increase likely from the increased storage and anticipated effects to next 4-year or 10-year drought?
 - 93. Water planning should be based on minimum flows, not on average flows, to allow for appropriate growth restrictions and sustainable populations.
 - 94. Effect on displacing homes with the Gross Reservoir enlargement alternative.
 - 95. Effects on quality of life in Coal Creek Canyon and Magnolia areas with Gross Reservoir expansion that would probably require a renewal of efforts to establish a gravel quarry on the east slope of Scartop Mountain.
 - 96. What compensating benefits are there to the residents of the Magnolia, Lakeshores, Crescent Park, and other communities adjacent to Gross Reservoir for the disruption of their lives when they are not customers or recipients of Denver Water? Shouldn't the impacts and costs of the burgeoning population growth in other metropolitan Denver cities and counties be borne by the promoters and developers of the new subdivisions, and by the eventual residents who move in?

Environmental Justice

- 97. Assume that this EIS will result in a decision guided by the precepts of environmental justice, and that the ecosystem and the relatively small population who are directly impacted by this proposed project will receive complete and impartial consideration.

Transportation

- 98. Effect of Gross Reservoir expansion on traffic on access road, highway, and roads up Coal Creek Canyon.
- 99. How and where will construction vehicles, equipment, and materials gain access to the shores of Gross Reservoir?
- 100. Effect of Gross Reservoir construction on other projects such as W-470 construction.
- 101. Effect of Gross Reservoir construction on local traffic and commuter ski traffic.
- 102. Consider relationship of this project to the transportation and land use planning process occurring in the Northern Front Range.

Section 3 – Summary of Issues

Hazardous Materials

103. With a reduction in in-stream flows, consider the potential for hazardous materials to infiltrate the Fraser River due to a spill incident on US Highway 40 or the railroad tracks adjacent to or in proximity to the upper Fraser River.
104. Effect of resuspension of radionuclides south/southeast of Rocky Flats during excavation (refer to Phase I audit for Leyden Gulch or associated facilities).
105. Effect of anticipated seepage of contaminated water from Gross Reservoir into local wells, primarily in the Lakeshore subdivision. Heavy metals from the West Slope are already above recommended levels.

Noise

106. Effect of Gross Reservoir expansion on noise.

Cumulative Impacts

107. Ensure cumulative impacts are considered as part of the project.
108. Cumulative effects on the Colorado and Fraser Rivers as a result of Windy Gap Firing Project and Moffat Collection System Project:
 - a. Effect on water flows.
 - b. Effect on fisheries.
 - c. Effect on water-related recreation and Winter Park Ski Area.
 - d. Effect on water storage needs.
 - e. Effects on Grand County.
109. Both the Corps and the Bureau of Reclamation (Reclamation) should use the same water rights assumptions in their cumulative impacts analysis and disclose the details of those assumptions. Both agencies should use Denver Water's Platte and Colorado Stimulation Model because it was used by UPCO and is more familiar and acceptable to West Slope interests.
110. Cumulative impacts analysis should focus on the aquatic impacts and stream changes of the South Platte River system within Colorado.
111. Because the project may include depletions in the Upper Fraser and Williams Fork Rivers, and the Windy Gap Firing Project will reduce virgin flow in Grand County, coordination with other planning groups is critical.
112. Cumulative impacts should include disclosure of potentially adverse impacts to aquatic resources from reasonably foreseeable development.
113. Cumulative effects analysis should take into account the effects of reasonably foreseeable growth in the area. To the degree the project may enable and/or induce development in excess of that already accounted for in land use, economic, and transportation plans, the impacts of the development beyond established estimates must be analyzed.

114. Include the Colorado Springs Utilities (CSU) proposal to provide a source of substitute supply to Green Mountain Reservoir to replace diversions through CSU's Continental/Hoosier trans-mountain diversion system facilities in cumulative impacts analysis.

Suggested Data Sources

115. Consider data obtained by Greg Horsetman for boreal toad and cutthroat trout on the West Slope.
116. Utilize existing studies in assessing impacts to the Fraser River:
 - a. UPCO Study will identify minimum amount of streamflows required for municipal, recreational, and industrial uses; water quality impacts; and other environmental impacts and mitigation measures.
 - b. GEI Study will identify cooperative mitigation for impacts caused by the Moffat Collection System Project and the Windy Gap Firing Project.
117. Utilize the Magnolia Environmental Preservation Plan as a source of information about the natural and human environment around Gross Reservoir, as well as the sentiments and desires of the area residents.
118. Utilize the South Metro Water Supply Investigation, the Northeast Quadrant Investigation, the Northwest Cooperative Investigation (1999), the SB 74 – Denver Basin and South Platte River Basin Technical Study (Hydrosphere 1998), the Division 5 Water Availability Study for Endangered Fish (aka the Colorado River Coordinated Facilities Program), and the Chatfield Storage Reallocation Study.
119. Consider soil contamination information from *Church vs. Rocky Flats* when analyzing the potential impacts from previous Rocky Flats fires on the Leyden Gulch site.

General Comments

120. Consider combining the Windy Gap Firing Project EIS and the Moffat Collection System Project EIS.
121. Coordinate evaluation of data, alternatives, and impacts with the Windy Gap Firing Project and the Northern Integrated Supply Project (NISP).
122. Concerned that two major Colorado River Basin water users, Denver Water and the Northern Colorado Water Conservancy District, are seeking permits from two separate federal lead agencies, the Corps and Reclamation, for the same water originating in the headwaters of the Colorado River and its tributaries for the same basic purpose of meeting the municipal water supply needs in the Northern Front Range. It is critical that each agency use similar baseline assumptions, consistent hydrology modeling, and fully examine the cumulative impacts of the projects.
123. Coordinate involvement with Reclamation. Was Reclamation invited to be a cooperating agency?
124. Request by Grand County and the Town of Winter Park that Grand County be a cooperating agency to ensure connectivity with this project and the Windy Gap Firing

Section 3 – Summary of Issues

Project, and that the Corps include funding in its budget requests for any major activities or analyses that Grand County will perform as a cooperating agency.

125. Recommend that Denver Water continue participation in the UPCO Study.
126. Should Denver Water be the agency to control the agreement with Xcel Energy (Shoshone Plant) when the agreement is up for renewal in 2006?
127. What is the federal government doing to address Homeland Security relative to NEPA?
128. Re-evaluate publicity provided for the public scoping meetings. Legal notices and public notices are not sufficient to make the public aware of the project and/or meetings.
129. Consider the impartiality of URS as a third party contractor.
130. Identify all new permits and approvals that will be required.
131. How would proposed new changes to Gross Reservoir preserve the integrity of past public processes during the FERC re-licensing process, involving innumerable public and private entities, and how would they be compatible or incompatible with the agreements and outcomes reached in the re-licensing process?